

R1/12

Not to be cited without prior reference to the FRS Marine Laboratory, Aberdeen

FRV *Scotia*

Cruise 0105S

REPORT

6-16 January 2005

Ports

Loading: Aberdeen

Unloading: Aberdeen

Personnel

P Walsham (In charge)
M Russell
A McIntosh
M Rose
E Dalgarno
G Packer
G Stowasser (Aberdeen University)

Fishing Gear: BT 101

Objectives

1. To undertake water, sediment and biological sampling for the National Marine Monitoring Programme (NMMP).
2. To undertake random stratified sediment sampling as part of the redesigned National Marine Monitoring Programme.
3. To collect water samples for hydrographic studies as part of the Scottish Coastal Eutrophication Assessment Survey.

Out-turn Days per Project: 11 days 10124 (AE11p)

Narrative

All sampling and scientific equipment were loaded and secured before departure at 1100 on 6 January 2005. Water sampling, in support of the Scottish Coastal Eutrophication Assessment Survey (SCEAS), commenced at 1300 with the aim of collecting samples at 15 minutes intervals for the duration of the cruise.

Adverse weather resulted in passage towards the Tay/Forth NMMP station being along the SCEAS coastal track. Continuing adverse weather precluded fish and sediment sampling at the Tay/Forth NMMP station (NMMP165), therefore coastal water sampling continued to Berwick. The East Coast random stratified sediment sampling stations, nearest the SCEAS track, were occupied during passage to the Moray Firth. The Offshore Moray Firth NMMP station (NMMP105) was sampled between 1800 and 2230 on 7 January. Random Stratified

sediment sampling stations were occupied as passage was made to the Intermediate Moray Firth NMMP (NMMP95) water and sediment sampling site. Passage was made to the NMMP 95 fishing ground where one trawl was undertaken before work was suspended at 0930 due to a propulsion motor problem. Work recommenced at 1400 with a further two trawls and the remaining Moray Firth random stratified sediments being collected before completion of the area by 2300 8 January 2004. Passage was made overnight to the North Minch where random stratified sediment samples, NMMP 85 fish, water and sediment samples were collected between 0930 on the 9 January and 0300 on 10 January. Severe adverse weather conditions and time constraints precluded sampling of the Clyde and Solway NMMP stations, NMMP35 and NMMP25, respectively. Remaining random stratified sediment sites in the Lower Minch were occupied before passage was made to shelter off Broad Bay on the evening of 11 January. *Scotia* continued to dodge in Broad Bay until passage to the East could be made on 13 January. East Coast random stratified sediment sampling sites were occupied during passage to the Tay/Forth NMMP station (NMMP165). Sampling of the remaining East Coast random stratified sediment stations and the Tay/Forth station (NMMP165) was completed on 14 January and passage made to Aberdeen. All scientific gear and samples were transferred to FRS.

Results

Four of the six Scottish NMMP offshore sites were occupied (Fig. 1). At all sites, water from 5 m from the surface and 5 m off the bottom, sediment for macrofaunal benthic analysis, polycyclic aromatic hydrocarbons (PAH), chlorinated biphenyl (CB), trace metals and particle size analysis (PSA) and fish for chemistry and biological effects measurements were taken as per Table 1.

NMMP Site	Water samples	Sediment Chemistry (PAH, CB, trace metal, PSA)	Macro Benthos	Fish Samples. Chemistry and biological effects
Tay/Forth (NMMP 165)	5 m from surface, 5 m from bottom	5 replicates	5 x 1 mm and 5 x 0.5 mm fractions	12 fish 1 pool of 4, 1 pool of 3 and 1 pool of 5
Moray Firth Intermediate (NMMP 95)	5 m from surface, 5 m from bottom	5 replicates	5 x 1 mm and 5 x 0.5 mm fractions	3 pools of 5
Moray Firth Outer (NMMP 105)	5 m from surface, 5 m from bottom	5 replicates	5 x 1 mm and 5 x 0.5 mm fractions	5 pools of 5
Minch (NMMP 85)	5 m from surface, 5 m from bottom	5 replicates	5 x 1 mm and 5 x 0.5 mm fractions	5 pools of 5

The water samples taken at the NMMP stations were analysed on board *FRV Scotia* for total oxidised nitrogen, phosphate and silicate concentrations. Determination of ammonia and nitrite will be completed at FRS.

A total of 653 water samples were taken in support of the Scottish Coastal Eutrophication Assessment Survey (Fig. 1). All samples were analysed on board *FRV Scotia* for total oxidised nitrogen, phosphate and silicate and 376 were analysed for ammonia.

P Walsham
21 January 2005

Seen in draft: Captain Peter Ramsay, OIC *Scotia*

0105S Cruise Track



Figure 1 0105S Water sampling cruise track and NMMP stations occupied 6-14 January 2005.

Circulation List: Cruise Programmes and Reports

SCOTIA VESSEL

Programmes - Mr J A Morrison for approval. Reports - Mr J A Morrison for approval.

Issue two copies of Record of Haul and Station Numbers pro-forma with Scientist-in-Charge's copy of *Scotia* and *Clupea* programmes.

Two xerox copies of track chart for reports to be sent to Dr L Rickards.

PROGRAMMES ONLY

Lab staff

~~Mr J T M Hunter~~
~~Mr T Reid~~
~~Mr P J Copland~~
~~Mr J Dunn~~
~~Mr A Beaton~~
~~Mr G Howard~~
~~Security~~

Non-lab staff

~~Island Cmdr Faroes (Faroes only)~~
~~Flag Officer, Denmark (Danish part of N Sea only)~~
~~Coastguard~~
~~G Lees~~

PROGRAMMES AND REPORTS

Lab staff

Mr J A Morrison
Capt R Denholm
Mr R S T Ferro) Fish Man team
Mr C Hall) progs only
Dr R M Stagg
Dr C Moffat
Mr M R Heath
Mr A Macdonald
D Lichtman (+ additional copy of track chart
of reports only)
Mrs E Morrison
CO/OIC of Vessel (*Scotia*) (to be faxed)
Library (2)
File

Non-lab staff

~~Library, Danmarks Fisk (reports only)~~
~~Mr J Mortensen (Faroes only)~~
~~Mr A Souplet (Fishing Cruises only)~~
~~Dr S Ehrich (Entering German Waters) (reports only)~~
W J McCurdy, Belfast
Technical Director, SFIA (J E Tumilty)
Dr L Rickards
Dr I Joint
Director – Havfor Inst, Norway
Dr S Ehrich
Monsieur le Chef du dépt, Nantes
Mr J C Brabant
Mrs van Duyvenvoorde
Dr J G Gordon
G Kane
R de Clerck
Mr B Stewart
Capt J Cannan (*Scotia* and *Clupea* only)
Controller Coastal Ops - A Stewart
Dr P Grieg-Smith
Mr H C Boyar
Dr R J A Atkinson
Mr H i Jákupsstovu
Mr C Bullimore (To be faxed: 01923 846392)

Laboratory Personnel on Vessel

*P Walsham
M Russell
A McIntosh
L Phillips
M Rose
E Dalgarno
G Packer
G Stowasser

Fishery Officers at

Aberdeen